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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,824	03/29/2006	Hatsuhiko Harashina	2101-26	9914
23117 7590 12/15/2008 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
USELDING, JOHN E				
ART UNIT		PAPER NUMBER		
1796				
MAIL DATE		DELIVERY MODE		
12/15/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

10/573,824

**Applicant(s)**

HARASHINA, HATSUHIKO

**Examiner**

JOHN USELDING

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3-6 and 10-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-6, 10-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-6, and 10-18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harashina (2003/0036591) in view of Harashina (WO 2001/05888). US Patent 6,753,363 B1 is a national stage application of the WO document and is used as an English translation thereof. *See MPEP 901.05.*

Regarding claims 1 and 3: Harashina ('591) teaches a resin composition comprising a polyacetal resin and a basic nitrogen-containing compound wherein the basic nitrogen-containing compound may be a carboxylic acid hydrazide (0066). Harashina ('591) teaches a hindered phenol antioxidant (0010), a processing stabilizer that can be long-chain or higher fatty acids or derivatives thereof or polyoxyalkylene glycol (0050). Harashina ('591) teach heat stabilizer that an alkali or alkaline earth metal compound (paragraphs 0063, 0072-0082, 0151-0159). Harashina ('591) does not teach any phosphorus flame retardant.

Harashina ('591) fails to teach the carboxylic hydrazide that is claimed though it does teach hydrazides of polycarboxylic acids as one permutation of the heat stabilizer additive (0066).

However, Harashina ('888) also teaches polyacetal compositions with basic nitrogen-containing compounds, (Col. 2, lines 49-51), wherein the basic nitrogen-containing compound may be a hydrazide, with examples given of derivatives of terephthalic acid, naphthalenedicarboxylic acids, biphenylenedicarboxylic acids, 1,4,5,8-naphthoic acid, and polyhydrazides of C<sub>7-16</sub> aromatic polycarboxylic acids derivatives thereof (Col. 30, lines 7-32), which corresponds to claims 1 and 3 of the instant claims. Although Harashina ('888) teach several possible hydrazides it would have been obvious to one of ordinary skill in the art at the time the invention was made to have tried any of them from the finite list. See MPEP 2141. Harashina ('591) and Harashina ('888) are analogous art because they are both concerned with the same field of endeavor, namely polyacetal resin compositions that can comprise a carboxylic acid hydrazide, heat stabilizers, and antioxidants. At the time of the invention a person having ordinary skill in the art would have found it suitable to have used any of the carboxylic acid hydrazides of Harashina ('888) as the heat stabilizer of Harashina ('591) and would have been motivated to do so because it would improve the heat stability of the composition.

Regarding claim 4: Harashina ('591) teaches a ratio of 0.001 to 10 parts by weight of the hydrazide to 100 parts by weight of the polyacetal (0093).

Regarding claims 5, 6, and 12: Harashina ('591) teaches using weather (light) resistant stabilizers for polyacetal resins that include benzotriazole, benzophenone, aromatic benzoate, cyanoacrylate-series, or oxalic anilide-series compounds (0020-0028 and 0133-0138). These compounds are substantially free from an intramolecular ester bond.

Regarding claims 10 and 11: Harashina ('591) teaches that heat stabilizers, including metal salts of hydroxyl-substituted carboxylic acids re used as heat stabilizers in the protection of polyacetals (paragraphs 63, 0072-0082) Harashina ('591) teach that same embodiments as the applicant (0151-0159).

Regarding claim 13: Harashina ('591) teach an acrylic core-shell polymer (0096), which will intrinsically improve the impact resistance.

Regarding claim 14: Harashina ('591) teaches that their composition may also comprise a slip improving agent (0095) but fails to teach a particular compound. Harashina ('888) teaches that examples of a slip agent include silicone resin, fluororesin, and polyolefinic resin (Col. 35, lines 41-42). Harashina ('591) and Harashina ('888) are analogous art because they are both concerned with the same field of endeavor, namely polyacetal resin compositions that can comprise a carboxylic acid hydrazide, heat stabilizers, and antioxidants. At the time of the invention a person having ordinary skill in the art would have found it obvious to have used the slip additives of Harashina ('888) as the slip additives of Harashina ('591) and would have been motivated to do so because it would lower the friction and provide easier processing.

Regarding claim 15: the process of mixing a polyacetal resin with an aromatic compound, a basic nitrogen-containing compound (of which includes the carboxylic acid hydrazides) and kneading and extruding the mixture is taught by Harashina ('591) (0096). Melting and mixing occur in the extruder. Harashina ('591) fails to disclose in the method that the carboxylic acid hydrazide is fed from a side feed port of the extruder. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the carboxylic acid hydrazide at any time during the extruding process. Selection of any order of performing process steps, i.e. whether the hydrazide is added at the main feed port or the side feed port, is *prima facie* obvious in the absence of unexpected results. See MPEP 2144.04.

Regarding claim 16: Harashina ('591) teaches a shaped article (0096)

Regarding claim 17: Harashina ('591) teaches examples that meet the formaldehyde limitations as claimed (Tables 1-3).

Regarding claim 18: Harashina ('591) teaches automotive parts, architectural parts, household and cosmetic parts and medical device parts (0106).

### ***Response to Arguments***

Applicant's argument filed 12/3/2008 with regard to the fact that Harashina ('888) does not teach a composition substantially free from a phosphorus-containing flame retardant has been persuasive. Harashina ('888) teaches that the phosphorus flame retardant is used in a small amount (column 2, lines 46-47 and column 4, lines 1-6).

Harashina ('888) teaches embodiments that use only 6 parts by weight (4.7 weight percent) of the phosphorus flame retardant (Table 1). However, these values are still deemed too high to meet the limitation "substantially free from".

Applicant's other arguments filed 12/3/2008 have been fully considered but they are not persuasive because:

Applicant's argument that since Harashina ('888) does not teach embodiments comprising the combinations as claimed, therefore Harashina ('888) does not teach the combination is not persuasive. The prior art is not only limited to its examples but the entire teachings contained within the document.

Applicant's argument of unexpected results is not persuasive. The applicant has only shown a difference in results by altering the carboxylic acid hydrazide compound when specific compounds are used in the composition. For one, the scope of the claims is not specific enough to be commensurate with the showing of the different results. See MPEP 716.02(d). Also, of the three components combined in the 103 rejections one of them (weather (light)-resistant stabilizer) is not even present in the comparative examples and the other two (heat stabilizer and processing stabilizer) are the same in the applicant's examples and the comparative examples. Also the unexpected results are expected. Harashina ('591) teach that similar compositions can have reduced formaldehyde emissions and inhibition of bleeding (0110).

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN USELDING whose telephone number is (571)270-5463. The examiner can normally be reached on Monday-Thursday 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Uselding  
Examiner  
Art Unit 1796

/Marc S. Zimmer/

Primary Examiner, Art Unit 1796